Intraoperative Antimicrobials Irrigations for Lung Transplant

Procedures:

Pulmonary infections post-cardiothoracic surgery can present a challenging complication in post-procedure management. Antimicrobial irrigations into the pleural cavity during surgery may help reduce the risk of developing recurrent infections by providing the opportunity to provide high drug concentrations directly to the site of infection. This policy shall guide the standard regimens approved for the prevention and treatment of selected pulmonary irrigations during cardiothoracic surgery.

Ideal antimicrobials to be given as an intrapleural irrigation should have concentration dependent killing. Although the irrigation will dwell in the intrapleural space, time-dependent antibiotics will not be effective for the short duration of administration.

1.0 Inclusion Criteria

1.01 Intrapleural antimicrobial irrigation may be considered in the following situations:

1.01.1 Patients with a history of current or recurrent pulmonary or thoracic cavity infection

1.01.2 Patients with cystic fibrosis (CF)

2.0 Exclusion Criteria

2.01 Patients with documented or suspected immediate-type hypersensitivity (IgE-mediated) reaction to the antimicrobial of choice or excipients in formulation (e.g. anaphylaxis)

3.0 Ordering instructions

3.01 MD or OR nursing staff will place appropriate antimicrobial irrigation order. Pharmacy will review and verify the order

4.0 Preparation

4.01 Intrapleural irrigations compounded by the pharmacy:

4.01.1 Irrigations must be prepared in a laminar flow hood or biological safety cabinet using aseptic technique

4.01.2 Pharmacy will prepare 2 x 1000 mL bottles.

4.01.3 All pharmacy prepared irrigations are stable for 12 hours at room temperature.

4.01.4 A final preparation shall be labeled with an auxiliary sticker “Irrigation Only”
5.0 Table of approved antimicrobial irrigations:

<table>
<thead>
<tr>
<th>Medication</th>
<th>Mg Dose / 1000mL</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amphotericin deoxycholate</td>
<td>50 mg</td>
<td>Sterile water for injection</td>
</tr>
<tr>
<td>Amikacin</td>
<td>1,000 mg</td>
<td>0.9% irrigation solution</td>
</tr>
<tr>
<td>Colistin</td>
<td>150mg</td>
<td>0.9% irrigation solution</td>
</tr>
<tr>
<td>Tobramycin</td>
<td>300 mg</td>
<td>0.9% irrigation solution</td>
</tr>
</tbody>
</table>

6.0 Administration:

6.01 Intrapleural irrigations for the OR may only be administered by cardiothoracic surgeons or fellow

6.02 Intrapleural irrigations should be entered with the administration instructions “Irrigate airway and thoracic cavity prior to implant. Allow to dwell 10-15 minutes.”

7.0 References:


7.03 Falagas ME, Vergidis PI. Irrigation with antibiotic-containing solutions for the prevention and treatment of infections. CMI. 2005:11(11); 862-867


7.06 Ng T, Ryder BA, Maziak DE, Shamji FM. Treatment of postpneumonectomy empyema with debridement followed by continuous antibiotic irrigation. J Am Coll Surg. 2008 Jun;206(3):1178-83


Westerman EL. Toxicity of Mediastinal Irrigation With Bacitracin, JAMA, 1983, 250(7):899